

REMARKS

Claims 11-27 are currently pending in this application, as amended. The Title of the Invention section has been amended in order to more clearly indicate the invention to which the claims are directed. Claims 1-10 have been canceled. Claims 11-27 have been added. Support for the new claims can be found at least in the original claims and in the original Specification at page 7, line 13 – page 8, line 22; page 9, lines 1-8; page 10, line 9 – page 11, line 23; page 14, lines 1-25; page 15, lines 2-21; and page 18, line 14 – page 20, line 16. Accordingly, no new matter has been added.

Specification

The Examiner has indicated that the Title of the Invention is not descriptive and that a new Title of the Invention is required that is clearly indicative of the invention to which the claims are directed.

Accordingly, the Applicant has amended the Title of the Invention section in order to more clearly indicate the invention to which the claims are directed.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-6 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,018,400 (Blair), in view of U.S. Patent No. 6,219,149 (Kawata *et al.*), hereinafter, “Kawata.” The Examiner asserts that Blair teaches a printing data processor comprising an editing process part for receiving printing data in the form of a page description language and a printable bit image form, an intermediate-form printing data memory for storing printing data of the intermediate form, and an expansion process part for expanding printing data of the intermediate form, wherein the editing process part for updating page state data of each page to printing data of the intermediate form edited page by page. But, the Examiner acknowledges that Blair fails to teach that the page processor includes a register process part for analyzing printing data of the intermediate form edited page by page. However, the Examiner contends that Kawata teaches a register process part for analyzing printing data of the intermediate form edited page by page and adding page state data of each page to printing data of the intermediate form. It is the Examiner’s position that it would have been obvious to modify the page processor of Blair to include a register process part for analyzing printing data of the

intermediate form edited page by page and adding page state data to printing data of the intermediate form as taught by Kawata.

The Applicant respectfully traverses the rejection of claims 1-6 in view of the foregoing amendments.

Present Invention

The present invention is directed to a printing data processor including a printing data memory and an editing process part. The printing data memory is for storing printing data with page description language form output from a host. The editing process part which, while editing, at every page, the printing data into intermediate form in between the page description language form and printable bit map form, generates page state information indicating the state of the page based on the printing data output from the host. The printing data is judged based on the page state information and a printing process is performed.

In another embodiment, the present invention is directed to a printing data processor including a printing data receiving part for receiving printing data output from a host and a page state judgment part for judging the state of the printing data at every page based on received printing data. The printing data processor also includes a plurality of usagewise-separated register process parts respectively corresponding to judgment results of the page state judgment part. The printing data processor further includes a selection process part which judges based on the judgment results of the page state judgment part and selects a most suitable one from the plurality of usagewise-separated register process parts.

Cited reference - Blair

Blair discloses a printer 10 that receives input page description information from a host processor via an input/output (I/O) module 12. The information is fed via a bus system 14 and is stored in memory. A central processing unit (CPU) 18 controls overall operation of printer 10 and includes a page processor procedure 20 which, in conjunction with the remaining elements of printer 10, controls conversion of the page description language to rasterized data that is suitable for transfer to a print engine 22. Printer 10 further includes an image processing module 24 which converts an intermediate form of page image data to a rasterized image data that is suitable for rendering by print engine 22. Under control of page processor 20, the page

description language from memory 16 is converted to a display list 26. Display list 26 comprises a plurality of page strips of page intermediate data which, together, define the images to be placed on the media sheet being processed by print engine 22. Each page strip 30 includes a header 32 which defines the X-coordinate and Y-coordinate of an anchor point of the page strip on the page, and H and W parameters which define the height and width of the page strip. Further, each page strip 30 includes a "plane to process" field 34 which manifests a parameter that denotes which color plane is being processed in accordance with the various objects 36 that are present in the page strip. Each object 36 listed within a page strip includes definitional detail of a particular image to be rendered within the page strip, including its x,y anchor point coordinate, its height and width, and color plane data 40 that is to be ascribed to the object during the rendering of each color plane. As the C color plane is being rendered, when object 38 is being processed, the C value is accessed and utilized to create the color data for the object in the rasterized C color plane. As each succeeding color plane is processed, the succeeding M, Y and K values are accessed and used to control the respective color plane image data. Once a page strip has been rasterized, the rasterized data is stored in a respective video buffer, and control of the video buffer is then transferred to print engine 22 so that its data may be printed.

Cited Reference - Kawata

Kawata discloses a print processing apparatus that includes an input data preparation unit 1, an inputting unit 2, a converting unit 3, a rasterizing unit 4 and an outputting unit 5. The converting unit 3 further includes a phrase analyzing element 30, an intermediate data generating element 31, an intermediate data order controlling element 32 and an intermediate data storing element 33. The intermediate data generating element 31 includes a token interpreting component 310, a command executing component 311, an image processing component 312, a drawing state storing component 313, a vector data generating component 314, a font administering component 315, a matrix transforming component 316, a short vector generating component 317, a trapezoid data generating component 318 and a band division administering component 319. The image processing component 312 executes various kinds of image processing based on the image header and image data input to generate an output image header and output image data. The image processing component 312 then forwards the output image header and output image data to the band division administering component 319. The

drawing state storing component 313 stores pieces of information necessary for drawing which are given by the command from the command executing component 311.

The matrix transforming component 316 performs affine transformation on the vector data output from the vector data generating component 314 by using a transformation matrix of the drawing state storing component 313 and transfers the transformed vector data to the short vector generating component 317. The trapezoid data generating component 318 generates the trapezoid data to be drawn from the short vectors that are input and forwards the trapezoid data to the band division administering component 319. The band division administering component 319 divides a piece of trapezoid data covering the plural bands, among the pieces of trapezoid data that are input, into pieces of the trapezoid data for each of the bands. The band division administering component 319 then adds a band ID indicating to which band the data belongs, a bounding box of the set of the pieces of the trapezoid data divided into band units, data administering information, color information output from the drawing state storing component 313 or image data output from the image processing component 312, and a rasterizing process ID and transfers the data to the intermediate data order controlling element 32. The intermediate data order controlling element 32 rearranges the pieces of the data for every band unit in accordance with a determined overlap between the pieces of the data and classifies them into groups in each of which the pieces of data can be processed in parallel. The intermediate data order controlling element 32 then adds the hardware configuration ID and group ID to each piece of the data. The intermediate data storing element 33 stores the pieces of the intermediate data output from the intermediate data order controlling element 32 in band units for the page.

Claims 1-6

Claims 1-6 have been canceled. Accordingly, the rejection of claims 1-6 under 35 U.S.C. § 103(a) has been effectively rendered moot, and therefore, Applicant respectfully requests that the Examiner withdraw the rejection under 35 U.S.C. § 103(a) of claims 1-6.

Claim 11

New independent claim 11, as added, recites, *inter alia*:

a printing data memory for storing printing data with page description language form output from a host;

an editing process part which, while editing, at every page, the printing data into intermediate form in between the page description language form and printable bit map form, generates page state information indicating the state of the page based on the printing data output from the host,

wherein the printing data is judged based on the page state information and a printing process is performed.

Blair, or Blair modified by Kawata, each fails to disclose, teach or suggest a printing data processor with an editing process part which generates page state information indicating the state of the page based on the printing data output from the host and that the printing data is judged based on the page state information and a printing process is performed.

At best, Blair discloses a plane to process information of a page, but the plane to process information is not newly generated based on printing data from a host. Kawata fails to compensate for the deficiencies of Blair. Kawata does not disclose, teach or suggest any information regarding page state or that any form of new data is generated based thereupon.

To establish *prima facie* obviousness of a claimed invention, all the claimed limitations must be taught or suggested by the prior art. MPEP § 2143.03.

Even if Blair were modified to include the “register process part” of Kawata, the modified Blair device would not disclose each an every element of claim 11, which includes an editing process part which generates page state information indicating the state of the page based on the printing data output from the host and that the printing data is judged based on the page state information and a printing process is performed. Thus, all the claimed elements of new claim 11 are not disclosed by the modified Blair device. Applicant therefore respectfully submits that new claim 11 is therefore not obvious under 35 U.S.C. § 103(a) in view of the combination of Blair and Kawata.

Dependent claims 12-17 have been added to depend from new independent claim 11 and are also believed to be patentable for at least the reason that they are dependent upon allowable new independent claim 11 and because they each recite additional patentable elements or features.

Claim 18

New independent claim 18, as added, recites, *inter alia*:

a printing data receiving part for receiving printing data output from a host;
a page state judgment part for judging the state of the printing data at every page based on received the printing data;
a plurality of usagewise-separated register process parts respectively corresponding to judgment results of the page state judgment part; and
a selection process part which judges based on the judgment results of the page state judgment part and selects a most suitable one from the plurality of usagewise-separated register process parts.

Blair or Blair modified by Kawata, each fails to disclose, teach or suggest a printing data processor with a page state judgment part for judging the state of the printing data at every page based on received the printing data. Furthermore, as acknowledged by the Examiner, Blair and Kawata, either taken alone or together, fail to disclose teach or suggest a plurality of usagewise-separated register process parts respectively corresponding to judgment results of the page state judgment part and a selection process part which judges based on the judgment results of the page state judgment part and selects a most suitable one from the plurality of usagewise-separated register process parts.

As mentioned above regarding new claim 11, at best, Blair discloses a plane to process information of a page, but the plane to process information is not newly generated based on printing data from a host. Further, Kawata does not disclose, teach or suggest any information regarding page state or that any form of new data is generated based thereupon. Even if Blair were modified to include the register process part of Kawata, the modified Blair device would not disclose all of the elements of new claim 18, which also includes a plurality of usagewise-separated register process parts respectively corresponding to judgment results of the page state judgment part and a selection process part which judges based on the judgment results of the page state judgment part and selects a most suitable one from the plurality of usagewise-separated register process parts. Thus, all the claimed elements of new claim 18 are not disclosed by the modified Blair device. Applicant therefore respectfully submits that new claim 18 is therefore also not obvious under 35 U.S.C. § 103(a) in view of the combination of Blair and Kawata.

Dependent claims 19-27 have been added to depend from new independent claim 18 and are also believed to be patentable for at least the reason that they are dependent upon allowable new independent claim 18 and because they each recite additional patentable elements or features.

Allowable Subject Matter

The Examiner has stated that original claims 7-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Applicant has canceled claims 7-10 and added new claims 11-27 which more particularly point out and distinctly claim the patentable features of the invention. Several of the features of claim 7, which the Examiner acknowledges are not in the cited art, have been incorporated into at least new independent claim 18 and a variation of those features have been incorporated into independent claim 11. Accordingly, Applicant respectfully submits that the objection to claims 7-10 has been rendered moot.

CONCLUSION

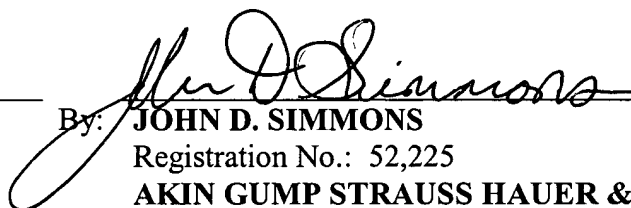
In view of the foregoing Amendments and Remarks, it is respectfully submitted that the present application, including claims 11-27, is in condition of allowance and such action is respectfully requested.

Respectfully submitted,

KOJI URASAWA

May 27, 2003
(Date)

By:



JOHN D. SIMMONS

Registration No.: 52,225

AKIN GUMP STRAUSS HAUER & FELD LLP

One Commerce Square

2005 Market Street, Suite 2200

Philadelphia, PA 19103-7013

Telephone: 215-965-1200

Direct Dial: 215-965-1268

Facsimile: 215-965-1210

E-Mail: jsimmons@akingump.com

JDS/CAJ
Enclosures